**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**
**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

MMB Docket No. **1781-0010**

Urquhart Reference: **SJB/P011888US** Confirmation No. **6005**

Application of: **Revie et al.** Group Art Unit: **3739**

Serial No. **10/505,304** Examiner: **Matthew John Kasztejna**

Filed: **July 11, 2005**

For: **Surgical Instrument System**

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**REPLY BRIEF**

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Sir:

Appellants' claimed invention involves providing markers on a component that is driven in a path of movement, for example, a drill bit that is driven in rotation. (See

claim 1.) The Examiner's Answer points to the Gillies reference and reasons that its teachings of MR visible markers 6 on a distal end of a cerebral catheter would provide impetus to a skilled artisan to place markers on Kienzle's drill bit 105. Appellants respectfully disagree. The catheter system disclosed in the Gillies reference does not have a rotatably driven component and a drive unit. Thus, the catheter markers placed on the catheter body are more like the markers placed on the drive unit housing of Kienzle's apparatus. This typifies the state of the art in surgical power tools such as drills and reamers.

It does, of course, make sense to track the distal end of a catheter as it is navigated through a patient's vascular system using markings on or towards its end. This has to be done using techniques such as magnetic resonance or X-ray imaging because the tracked end is located within the patient's vasculature.

In contrast, power tools used in surgery are tracked using optical systems because of the nature of the operation in which they are used. The sensors on the drive unit housing utilize visible or near visible radiation to identify where the tool is located. This is done using location markers in the form of an array of reflective spheres.

Heretofore, it has not been known to directly track the position of a shaft of a drill or reamer bit used with surgical power tools. This has been for a number of reasons, including the fact that the driven components are typically disposable, subject to abrasion, being knocked when in use, etc. Furthermore, the location markers in the form

of an array of reflective spheres could not be used on the rotating shaft of a drill or reamer bit. The present invention involves recognizing, in the field of navigated power tools, that it is appropriate to move away from this arrangement and to use a plurality of marker rings directly on the rotating shaft of the driven component such as a drill bit.

Fundamentally, the fields involving navigating the end of a catheter and monitoring the position of a drill bit or reamer are significantly different, so that the considerations which will be in the mind of a skilled artisan looking to improve on the reflective sphere arrays used previously on power tools (in drill bit/reamer monitoring field) would not obviously include the catheter navigation ideas from Gillies.

Also, it should be pointed out the multiple markers on the drill bit shaft are in the form of rings so that, when viewed during rotation, they appear as lines. This facilitates the generation of location and orientation information in a relatively elegant and simple manner.

Accordingly, for any and all the reasons set forth above, one skilled in the art would *not* have found it reasonable to combine Kienzle and Gillies in the manner proposed in the Examiner's Answer. Thus, a prima facie case of obviousness under 35 U.S.C. § 103 has not been established with regard to Appellants' claimed invention.

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Respectfully submitted,

February 18, 2009

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